

CHAPTER FIVE POPULATION

INTRODUCTION

The monitoring of ongoing population and land uses and the forecast of future trends is an essential component of regional land use planning. In Carbon County, ever-changing population and trends will influence future approaches to County and municipal land management, the management of County and municipal facilities and services, the planning and design of future public facilities, and some of the investments by private investors.

For many years, the development of regional population and land use forecasts relied heavily on the use of past trends to estimate future conditions. Various types of regression analyses, for example, were used to form assumptions for forecasts and projections of future growth. Some agencies such as the U.S. Bureau of Economic Analysis continue to use these approaches. While these methods provide some useful information, the basic, underlying assumption that past trends will parallel future conditions is often highly questionable. This is especially true in smaller rural communities such as Carbon County that are characterized by natural resource development activities.

In this context, Chapter Five primarily examines the distribution of the regional resident population, other demographic characteristics, as well as the type and location of general land uses in Carbon County. Selected national, regional, and local trends that are expected to influence future population and land use trends were also evaluated. These and other indicators were used to develop assumptions that were necessary to forecast future population and land uses. The assumptions were incorporated into a convenient statistical model to facilitate future revisions as future economic, land use, and population trends emerge.

While forecasts provide a useful point-of-reference for future planning and decisions, it is essential that Carbon County recognize that anticipated and unanticipated conditions will generate a need to periodically revise these forecasts. The availability of a new population and land use model, which was used in the development of the population and land use forecasts for the Carbon County Land Use Plan, will encourage and enable:

- the inclusion of future land use information;
- the incorporation of revised demographic, economic and land use assumptions by the County Department of Planning and Development; and,
- the calculation of revised population and land use forecasts.

Through its experience gained from various domestic and international projects, Pedersen Planning Consultants has learned that strong statistical correlations between residential land uses and population enable the use of a convenient, statistical method for the estimation of resident population in smaller rural and remote communities. In essence, when residential land uses can be geographically located and quantified for each type of existing housing units, relatively accurate estimates of resident population can be made through the application of average household size data to variable types of housing units. The use of this approach can be particularly useful between 10-year Census estimates.

The regular input of land use information from new building permits into the population and land use model for Carbon County will regularly update anticipated population forecasts for the 1996-2015 period. Consequently, the population and land use model that was developed for the Carbon County Land Use Plan is important for future land use and infrastructure planning because it provides:

- a useful methodology for the long-term monitoring of population and land use trends, and revising related assumptions; and,

- a technical tool that will enable the application of the County population and land use forecasts to the planning of public facilities and services by Carbon County, its ten municipalities, and the State of Wyoming.

Methodology

Calendar year 1996 was used as the base year for future population and land use forecasts. Base year estimates for the total County population in 1996 were made through the use of available U.S. Census estimates concerning average household size and net migration. This information was supplemented with birth and death records from the State Department of Health, Vital Statistics Branch, that indicate natural growth rate.

The regional distribution of the 1996 County population was estimated through the use of land use information that was developed by Pedersen Planning Consultants (PPC). PPC initially obtained 1996 electrical meter information from the four electrical utilities that serve Carbon County. These utilities include:

- Carbon Power and Light;
- Pacific Power;
- Yampa Valley Electric; and,
- Hot Springs Rural Electric Association.

This information provided a relatively accurate estimate of the resident population and land uses in most areas of Carbon County in 1996. However, some limitations were inherent with the electrical meter data since the format of these records was designed for utility management and operations purposes. For example, data from Pacific Power Light does not distinguish the status of installed electrical meters, i.e., active or inactive. Available data from the other three utilities occasionally reflected some ambiguity concerning the type of land use that was associated with each electrical meter.

For this reason, Pedersen Planning Consultants also researched available water and/or sewer records to calculate a more accurate estimate of the total number of occupied housing units for several municipalities in Carbon County. A total municipal population was estimated by multiplying the estimated number of occupied housing units in 1996 by the 1990 average household size for each municipality. Subsequently, the total 1996 municipal population was deducted from estimates for the total 1996 County population to derive the population of the County's unincorporated area.

A statistical adjustment was made to the 1996 population estimate since the total County estimate was believed to be reliable. The adjustment reflected a decline that was distributed proportionately to each municipality and the unincorporated area.

The assumptions that were applied to the development of forecasts for future population and land use were derived from the use of the following information sources:

- the economic analysis contained in Chapter Four of the Carbon County Land Use Plan;
- an assessment of housing vacancies in 1990 and 1996;
- the evaluation of land uses in the unincorporated areas and municipalities of Carbon County;
- available real estate industry information; and,
- informal discussions with representatives of the State Department of Administration and Information, Economic Analysis Division.

POPULATION

Total Resident Population of Carbon County

1920-1990

Between 1920 and 1950, Carbon County experienced a gradual increase in resident population (Figure 5-1). This growth occurred when Carbon County was a relatively stable, but expanding agricultural community. Coal development in the Hanna Basin, oil and gas development near Medicine Bow, and other mineral development in other parts of the County also influenced the growth in resident population. Mineral industry activities were also tied to railroad operations and related employment that fluctuated with variable growth and decline in the mineral industry. Timber harvests, however, were on the decline between the late 1920's until the mid-1940's (Abt Associates, 1975). Consequently, timber activities had some impact on the growth of the resident population.

A 15 percent decline in Carbon County's total population occurred between 1950 and 1970. This decline was prompted mostly by a series of economic events such as:

- In 1954, Union Pacific Railroad switched from coal-fired engines to diesel-burning locomotives.
- The closing of coal mines in the Hanna Basin in 1954 and the continued lack of significant coal production activities in this area until the early 1970s
- Economic interests from the East and Midwest United States purchased smaller family-owned ranches in the late 1950's and early 1960's and consolidated various ranches near Saratoga, Encampment, and Medicine Bow into larger units of production.
- The closure of timber mills in Hanna and Saratoga in the early to mid-1960's.
- The closure of the Saratoga Inn between 1963 and 1967.

Substantive population growth took place in the mid-1970's with the start-up of three coal mining operations in the Hanna area. Increased coal development projects in the Hanna Basin brought an influx of new coal miners and their dependents into the County.

Edward Hines purchased the existing timber mill in Saratoga around 1968. This renewed investment generated new employment and the largest payroll into the Platte Valley in the early 1970's.

In 1972, an increase in uranium production in the Shirley Basin area generated a population of some 800 residents in the Shirley Mountain area and an expanded population to Medicine Bow.

The upturn in the economy in the 1970's generated a resident population of 21,896 persons in 1980. This population, which represents the largest resident population ever recorded in Carbon County, represented a 39 percent increase during the 1970-1980 period. Significant population growth was evident in almost every community in Carbon County (Table 5-1).

The short economic upswing in the 1970's was followed by a significant out-migration of the population in the early 1980's when resource development projects were completed and/or closed. Between 1980 and 1987, the resident population dropped precipitously to about 17,500 residents (State Department of Administration and Information, Division of Economic Analysis, 1991). The out-migration that was experienced during this "boom and bust" cycle was primarily a consequence of a departing labor force from the energy industries and many persons employed in the service sector of the economy who left the County with their dependents to seek other employment and business opportunities.

1990-1996

The U.S. Bureau of the Census conducted the most recent census of population in Carbon County in April, 1990. This demographic information indicated that the total resident population of Carbon County slipped further to approximately 16,659 persons in 1990. This population level resembled the population of the County around 1975.

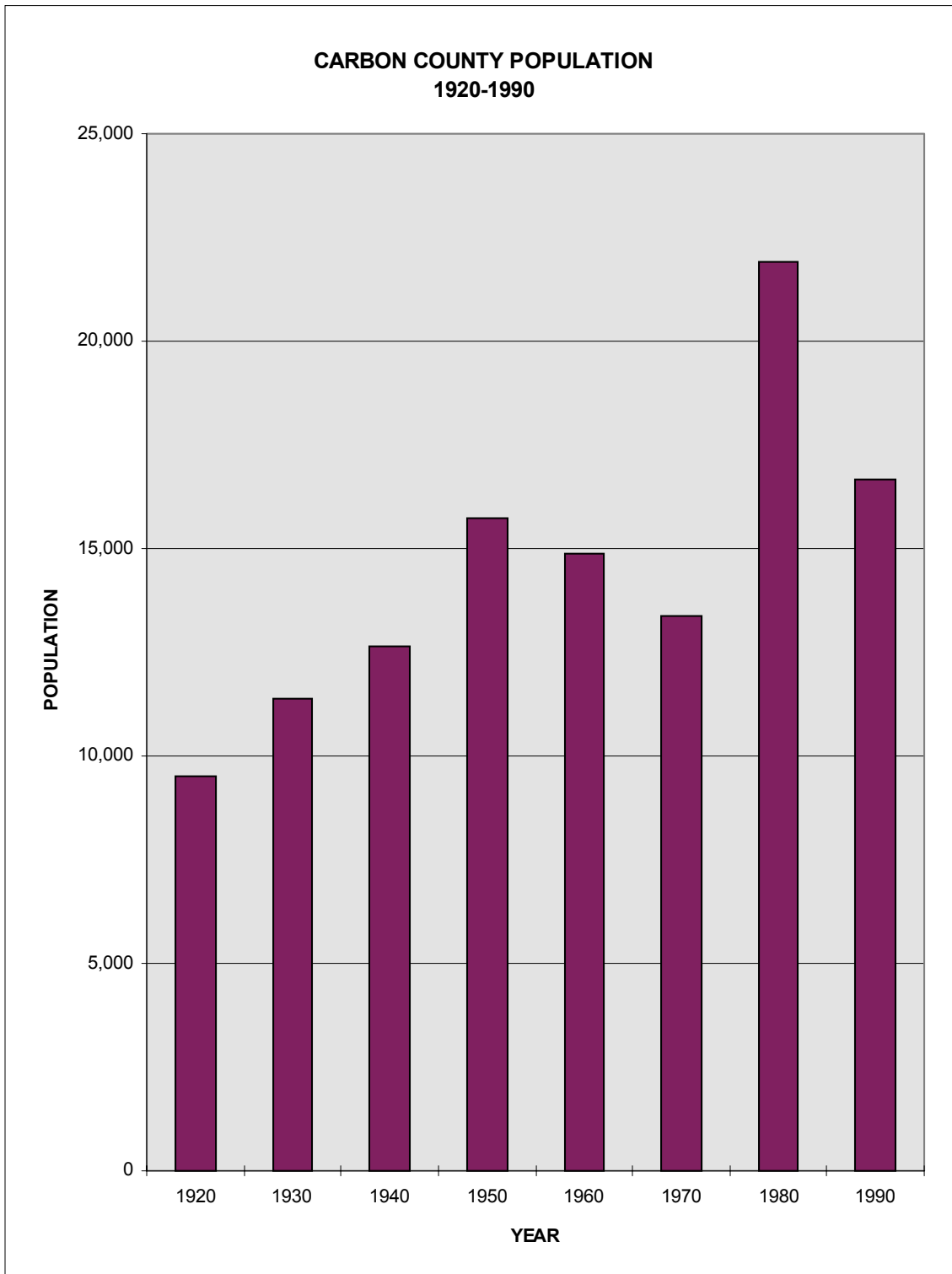


FIGURE 5-1

POPULATION TRENDS IN CARBON COUNTY

**TABLE 5-1
POPULATION TRENDS IN CARBON COUNTY
1920-1990**

	1920	1930	1940	1950	1960	1970	1980	1990
Baggs	200	192	221	206	199	146	433	272
Dixon	170	145	94	124	108	72	82	70
Elk Mountain	89	54	107	196	190	127	338	186
Encampment	230	209	331	288	333	321	611	490
Hanna	*	*	1,127	1,326	625	460	2,288	1,076
Medicine Bow	210	264	338	328	392	455	953	389
Rawlins	3,696	4,868	5,531	7,415	8,968	7,855	11,547	9,380
Riverside	29	34	68	50	87	46	55	85
Saratoga	449	567	810	926	1,133	1,181	2,410	1,969
Sinclair	*	*	604	775	621	445	586	500
Total Municipal Population	5,073	6,333	9,231	11,634	12,656	11,108	19,303	14,417
Unincorporated Areas	4,452	5,058	3,413	4,108	2,218	2,246	2,593	2,242
TOTAL COUNTY POPULATION	9,525	11,391	12,644	15,742	14,874	13,354	21,896	16,659

Notes: Data not available for Hanna and Sinclair for 1920-1930

Source: State Department of Administration and Information, Division of Economic Analysis, 1997;
U.S. Bureau of the Census, 1990

Recent demographic and land use evaluations by Pedersen Planning Consultants (PPC) suggest that population growth in the County during the 1990-1996 period has further decreased to a total resident population of about 15,855 persons. PPC's 1996 population estimate for Carbon County is based upon actual 1990-1996 natural growth rates and net migration statistics. These population factors are examined more closely in an upcoming section of Chapter Five that concerns "Factors Influencing Future Population Growth in Carbon County".

A sluggish economy in the early 1990's likely precipitated a higher rate of out-migration from Carbon County. However, a slow, but gradual growth in all five of the industries in Carbon County has more recently slowed out-migration and stimulated some new in-migration. Some of the more recent in-migration also reflects an influx of newer residents to the County that seek a slower-paced, rural lifestyle and/or desire to pursue new small business opportunities.

Regional Growth Trends Between 1990 and 1996

General

In 1990, about 87 percent of the population, or 14,417 persons, lived within the 10 incorporated municipalities of Carbon Counties. The unincorporated areas included 2,242 persons, which represented about 13 percent of total County population (Table 5-1).

Rawlins

The population of Carbon County in 1990 was predominantly located in the City of Rawlins that contained approximately 9,380 residents (Table 5-2). This population comprised about 56 percent of Carbon County's resident population.

In 1990, there were 3,943 housing units recorded via the 1990 Census (Table 5-3). No new homes had been built since 1984. This factor alone signaled a stagnation in the growth of the community population.

At the same time, housing characteristics exhibited some signs that the existing resident population was generally stable. Only 17 percent of the City's total housing stock was vacant. Some 56 percent of all housing units were owner-occupied.

A review of 1996 electrical meter data for Rawlins indicated that existing data was unreliable for the estimation of housing units. However, water meter information provided by the City of Rawlins yielded useful information regarding the total number of occupied housing units.

Water meter data from June, 1997 indicates that there were approximately 3,611 housing units (single family residential, apartments, and trailer units) in the City of Rawlins. Assuming an average household size of 2.63 persons per household, this data suggests that the estimated 1997 population was approximately 9,497 residents. When adjusted, this estimate reduced the population to 9,021 persons.

When correlated with 1990 population data, it is clear that Rawlins has experienced a modest decline in population between 1990 and 1997. The average annual growth rate during this period was about 0.63 percent. The decrease in the population of the county seat of Rawlins was a reflection of limited expansion in economic activities in the County during the 1990-1996 period. Despite that constraint, the limited population decline also demonstrates that considerable stability remained in the existing resident population.

Sinclair

Roughly seven miles east of Rawlins is the Town of Sinclair. Its 1990 population included approximately 500 residents.

In 1990, there were 210 housing units in Sinclair (Table 5-3). Eighty-nine percent of the housing stock was occupied. Of those housing units, 187 were occupied, while 23 were vacant (Table 5-3). Only 11 percent of the total housing stock was vacant.

The population of this community is largely dependent upon the operations of the Sinclair Refinery. Since the purchase of the Refinery by Mr. Earl Holdings in 1970, employment at the Refinery has generally remained stable. This factor has likely generated long-term stability in the size and ownership of the existing housing stock.

Between 1990 and 1996, the population of Sinclair rose to an estimated 564 persons. The Town Clerk believes that the growth in population may be the result of the in-migration of several families to Sinclair in the last few years (Musgrave, 1997). A number of these families represent larger households that are greater than the Town of Sinclair's 1990 average household size of 2.67 persons.

**TABLE 5-2
REGIONAL POPULATION DISTRIBUTION
CARBON COUNTY
1990-1996**

Municipality/ Area	April, 1990 Population	Estimated 1996 Population	1990-1996 Growth Rate (Percent)	Average Annual Growth Rate 1990-1996 (Percent)
Baggs	272	246	-09.55	-01.59
Dixon	70	121	72.85	12.14
Elk Mountain	186	173	-06.98	-01.16
Encampment	490	460	-06.12	-01.02
Hanna	1,076	1,094	01.67	-00.27
Medicine Bow	389	319	-17.99	-02.99
Rawlins	9,380	9,021	-03.82	-00.63
Riverside	85	70	-17.64	-02.94
Saratoga	1,969	1,905	-03.25	-00.54
Sinclair	500	564	12.80	02.13
Total Municipal Population	14,417	13,973	-03.07	-00.51
Unincorporated Area Population	2,242	1,882	-16.05	-02.67
TOTAL	16,659	15,855	-4.83	-0.80

Note: 1996 population estimates relied primarily upon the use of municipal data concerning the number of residential water meters that were used by full-time residents. This data was multiplied by an average household size determined by the 1990 U.S Census for each municipality. Estimates of the unincorporated area and each municipal population was adjusted downward to coincide regional distribution with the total County population estimate.

Source: Pedersen Planning Consultants, 1997; U.S. Bureau of the Census, 1990; Municipal Town Clerks and Utility Collection Managers in Carbon County, 1997; State Department of Administration and Information, Economic Analysis Division, 1997

**TABLE 5-3
SELECTED POPULATION AND HOUSING CHARACTERISTICS
CARBON COUNTY
1990**

(go to "table 5-3" file)

The recent in-migration of several families into the community did not generate any development of additional housing units in the community (Musgrave, 1997). However, it increased the number of occupied housing units. Available data from the Town of Sinclair suggests that there were about 205 occupied housing units in 1996 compared to 187 occupied units in 1990.

Platte Valley

The second greatest concentration of Carbon County residents is located in the Platte Valley communities of Saratoga, Encampment, and Riverside. These three communities included a combined population of 2,544 persons in 1990 that represented about 15 percent of Carbon County's total resident population.

The housing stock of these communities comprised 1,337 homes in 1990.

Between 1990 and 1996, these Platte Valley communities experienced some modest decline in resident population. No significant economic growth occurred in this area during the 1990-1996. Increased visitor populations in the summer months were evident in the area. However, these increases did not translate into increases of resident population.

Saratoga

The 1990 Census recorded a resident population of 1,969 residents in the Town of Saratoga. At that time, there were approximately 972 housing units; approximately 23 percent of the housing stock in Saratoga was vacant. About 77 percent of all housing units in Saratoga were occupied.

Town water meter records suggest there were about 780 housing units that were occupied throughout the year in 1996; about 10 percent of all housing units were owned by part-time residents (Bohlender, 1997). These statistics indicate that the Town gained approximately 23 more occupied housing units during the 1990-1996 period.

The increased number of occupied housing units suggest a modest growth in population of approximately 2,004 residents. When adjusted, the estimate reflects a slight decline, or about, 1,905 residents.

Encampment

The population of Encampment in 1990 was approximately 490 residents. There were about 305 housing units. About 37 percent of these units were vacant. Approximately 49 percent of the housing stock was occupied.

Available electrical meter data from Carbon Power and Light suggests that roughly 11 more housing units have been occupied between 1990 and 1996. Electrical meter records also indicate that there were 38 inactive electrical meters in 1996. Discussions with Carbon Power and Light representatives indicate that inactive residential meters are typically homes that are used only on a seasonal basis by part-time residents.

While Encampment gained about 11 occupied housing units during the 1990-1996 period, it is suspected that a modest decrease in population likely occurred due to some out-migration from this community during the 1990-1996 period. The out-migration was likely generated through the departure of younger adults who sought other employment or higher education opportunities outside of the County.

Riverside

About 85 persons resided in the Town of Riverside in 1990 (Table 5-3). The Town was characterized by about 60 housing units; approximately 40 percent of these housing units were vacant. Fifty percent of the housing stock was occupied.

The population of Riverside declined to about 70 persons between 1990 and 1996. Available sewer connection data indicates that there were about 62 residential connections in 1996; however, only 31 of the connections provided service to full-time residents (Munson, 1997).

Little Snake River Area

In 1990, the Little Snake River communities of Baggs and Dixon contained a resident population of 385 persons, or about two percent of the total County population. However, other residents live in adjoining unincorporated areas, e.g., Savery, that are situated along the Little Snake River drainage and the west side of the Continental Divide, as well as north and east of the Town of Baggs.

Baggs

The 1990 Census recorded a resident population of 272 residents. Housing data from the 1990 Census indicates a vacancy rate of about 36 percent of all housing units in Baggs. Homeowners resided in only 39 percent of the total housing stock. No new homes were built in the community between 1985 and 1990. These characteristics suggest stagnation in population growth and signs of possible future decline in population.

Available water meter records for 1996, which were furnished by the Town Clerk of Baggs, suggest a different trend. Water meter records indicate that there were about 136 occupied housing units in 1996 (Herold, 1997).

While the number of occupied housing units in Baggs increased, it is believed that the population of this community decreased during the 1990-1996 period. This decrease was generated from the out-migration of residents that sought employment and/or educational opportunities. Discussions with various residents indicate that this community has been characterized by continued out-migration of the resident population and related decreases in school populations between 1990 and 1996. In addition, these factors were not countered by any substantive new employment from existing industries.

Oil and gas development and ranching are the mainstays of the economy in the southwest part of Carbon County. Both industries have remained generally stable between 1990 and 1996, but have not generated any growth in employment. Much of the employment related to oil and gas development comes from out-of-state, or other contractors that are based in Rawlins and Sweetwater County.

Dixon

In 1990, the Town of Dixon contained a resident population of approximately 70 persons.

Approximately 63 percent of the community's housing units were occupied in April, 1990; the vacancy rate was about 37 percent. About 56 percent of the housing stock were occupied.

The resident population of Dixon is largely comprised of retirees. The population typically increases in the summer months when many homeowners return for the summer months. It is believed that the 1990 Census statistics may have reflected little of the incoming population that was present during the summer of 1990.

Between 1990 and 1996, the full-time resident population of Dixon increased considerably. This is evidenced by a noticeable increase in the number of residential water meters and occupied housing units. The municipal town clerk reports that approximately 59 housing units in Dixon were occupied in 1996 on a full-time basis compared to 33 occupied housing units in April, 1990 (Ward, 1997). The 1996 population increased to an estimated 121 residents.

Elk Mountain-Medicine Bow-Hanna and Northeast Carbon County

The communities of Elk Mountain, Medicine Bow, and Hanna included a combined resident population of 1,651 persons in 1990. The three communities represented approximately 10 percent of the total County population.

Elk Mountain

Approximately 186 persons resided in Elk Mountain in 1990. There were approximately 86 housing units in 1990; about 80 percent of the housing stock, or 69 housing units, were occupied.

Available electrical meter data suggests that some 13 new homes were constructed between 1990 and 1996. The presence of some 17 inactive meters correlates with the number of vacant housing units in the April, 1990 (Table 5-3). Most of the vacant units likely represent summer homes.

A small decline in resident population occurred between 1990 and 1996. Municipal water meter records indicate that there were 67 housing units that were occupied on an annual basis (Palm, 1997). It is estimated that Elk Mountain included a resident population of about 173 persons in 1996.

Medicine Bow

In 1990, the U.S. Census recorded a resident population of 389 persons. There were 198 housing units; 148 of these residential units (75 percent) were occupied.

Available water meter data for the Town of Medicine Bow indicates that the Town had 148 residential water meters in May, 1996. The Town Clerk of Medicine Bow reported that the Town has an average household size of about 2.3 persons per household. Consequently, the estimated resident population in 1996 was about 340 persons. When adjusted, the 1996 estimates reflect a population of 319 persons.

About six new residents have apparently moved into Medicine Bow since 1990. This immigration is also confirmed by available electrical meter data for Medicine Bow. Available data from Hot Springs Rural Electric Association indicates that an additional five homes were occupied or constructed in Medicine Bow between 1990 and 1996.

Nevertheless, the overall population of Medicine Bow declined slightly between 1990 and 1996. The lack of substantive economic growth in this area and uncertainty over future work associated with the Cyprus-Shoshone and Arch of Wyoming coal mines in Hanna have contributed somewhat to this decline in the population. At the same time, a significant proportion of the community is represented by older, retired persons. In addition, the resident population is characterized by a somewhat smaller number of women who are within the child-bearing age range of 15 to 44 years of age.

A retreat in this population decline probably began in 1995 and 1996. The recent establishment of Western Wood Products in 1995 generated some new employment in the community. In late 1996, more promising reports concerning future coal industry investment in the County may have provided more hope to mine workers that reside in Medicine Bow.

Hanna

In 1990, the population of Hanna included approximately 1,076 residents. There were 605 housing units in the Town of Hanna in 1990; about 65 percent of the housing stock, or 392 housing units, were occupied.

The prospects for new population growth were not promising in 1990. Only four new homes were built in the community between 1985 and 1990. Many homes, e.g., trailers, were hauled from this community and relocated elsewhere. The relocation of homes from this community continued through the mid-1990's.

Despite these signs, the resident population of Hanna increased slightly to about 1,094 persons in 1996. In 1996, the number of water taps in Hanna suggest that there were an estimated 419 residential units in Hanna that are occupied throughout the year (Smith, 1997).

Hanna is a coal mining town that is economically tied to two coal mining operations. Significant, cyclical variations in population occasionally occur in smaller communities that are dependent upon employment from resource-based exploration. More promising coal industry reports in 1995 and 1996 may have precipitated a small increase in Hanna's population during the 1990-1996 period.

Other Unincorporated Areas of Carbon County

Other unincorporated areas of the County were likely characterized by some decline during the 1990-1996 period. The total number of ranches in Carbon County has remained constant during the 1990-1996 period. Ongoing agricultural activities have not drawn new residents to Carbon County. However, some out-migration may be occurring with young adults who are leaving Carbon County for a college education, other job opportunities, or other life experiences.

No new residential subdivisions were constructed in the unincorporated areas during the 1990-1996 period. Some 15,000 acres of land in the Separation Flats area were split into smaller ranchette-size parcels that range from 40 to 640 acres in size. However, few residents reside in this area.

While the population of other unincorporated areas of the County was limited, real estate professionals in Carbon County reported a growing interest in the development of more rural properties in the unincorporated areas of the County. An increase in the number of building permits in these areas was also documented in 1995 and 1996.

Factors Influencing Future Population Growth in Carbon County

Introduction

There are several factors that will influence the future growth of Carbon County. Natural growth rates, i.e., births and deaths, population migration trends, average household size, the availability of lands for residential expansion, and prospects for future economic expansion represent some of the predominant factors.

Recent trends associated with these factors are dynamic and ever-changing. For this reason, the anticipated consequences associated with each influence was identified and evaluated to provide a basis and related growth assumptions for future population growth in Carbon County.

Natural Growth Rate

The natural growth rate of a region simply refers to the number of births less the number of deaths over a given period of time. For example, between April, 1990 and July, 1991, 259 births and 142 deaths took place in Carbon County. Consequently, there was a natural increase in population that represented 117 persons. Based upon the U.S. Census estimate of 16,659 persons in 1990, the natural growth rate was approximately 0.8 percent over a 15-month period.

More recently, the natural growth rate of Carbon County increased about 2.4 percent between April, 1990 and July, 1996, or an average of about 0.4 percent per year (Table 5-4). The natural growth rate of Carbon County is somewhat less than the national natural growth rate of about 0.6 percent between January, 1994 and January, 1995 (Pedersen Planning Consultants, 1997; Deardorff and Montgomery, 1997).

**TABLE 5-4
NATURAL GROWTH RATE OF RESIDENT POPULATION
CARBON COUNTY
APRIL, 1990-JULY, 1996**

	<i>April 90 to July 90</i>	<i>July 90 to July 91</i>	<i>July 91 to July 92</i>	<i>July 92 to July 93</i>	<i>July 93 to July 94</i>	<i>July 94 to July 95</i>	<i>July 95 to July 96</i>	<i>TOTAL April, 90 to July, 96</i>
Births	45	214	188	190	203	191	195	1,226
Deaths	31	111	136	117	134	148	142	819
Increase/ Decrease	+14	+103	+52	+73	+69	+43	+53	+407
Population excluding migration	16,673	16,676	18,828	16,901	16,970	17,013	17,066	17,066
Natural Growth Rate (%)	.08	0.62	0.31	0.38	0.41	0.25	0.31	2.44

Note: The April, 1990 resident population of Carbon County was 16,659 persons.

Source: Pedersen Planning Consultants, 1997; Wyoming Department of Administration and Information, Division of Economic Analysis, 1997

A future decline in the natural growth rate of Carbon County is expected to take place to the year 2015. This decline in the natural growth rate for Carbon County is expected to gradually drop from an average of about 0.4 percent in 1996 to about 0.25 percent in the year 2015.

It is anticipated that a combination of the following factors may generate this decline:

- Future decreases in the number of women in childbearing ages, i.e., 15 to 44 years of age may occur;
- Future shifts in the age distribution of women in childbearing ages; and/or,
- Future reductions in age-specific fertility rates.

A sign of this future trend in Carbon County is already being realized on a national basis. Since 1990, the number of births in the United States has continually dropped since 1990 (Deardorff and Montgomery, 1997).

Migration

Another factor that will continue to influence future population growth in Carbon County is the amount of "in and out-migration", or the number of people that move in and away from the County over a given period of time. Americans typically move about 12 times during an average lifetime (U.S. Bureau of the Census, 1997). "Net migration" is the difference between the number moving in and out of an area such as Carbon County.

Between April, 1990 and July, 1996, net migration in Carbon County represented an overall departure of 1,211 persons away from the County (U.S. Bureau of the Census, Population Estimates Branch, 1997; Wyoming Department of Administration and Information, Division of Economic Analysis, 1997).

Available migration statistics (Table 5-5) indicate that net migration out of Carbon County slowed somewhat since July, 1992; however, greater out-migration by the County population continued through, at least, July, 1996.

The impact of recent net migration upon the overall resident population of Carbon County is presented in Table 5-6. When correlated with natural growth rates, it is apparent that Carbon County population decreased by 804 persons during the 1990-1996 period.

The future migration of the Carbon County is dependent upon various factors. The stability of existing employment, future employment prospects, personal motivations for residency in Carbon County, and the quality of life perceived by residents represent some of the considerations that will likely influence in and out-migration in Carbon County.

TABLE 5-5 NET MIGRATION CARBON COUNTY APRIL, 1990-JULY, 1996	
Year	Net Migration (Number of Persons)
April-July, 1990	-72
July, 1990-July, 1991	-320
July, 1991-July, 1992	-322
July, 1992-July, 1993	+48
July, 1993-July, 1994	-209
July, 1994-July, 1995	-49
July, 1995-July, 1996	-287
April, 1990-July, 1996	-1,211

Source: Wyoming Department of Administration and Information,
Division of Economic Analysis, 1997

TABLE 5-6 INFLUENCE OF MIGRATION UPON RECENT POPULATION GROWTH JULY, 1990-JULY, 1996							
	July, 1990	July, 1991	July, 1992	July, 1993	July, 1994	July, 1995	July, 1996
Natural Increase/ Decrease	+14	+103	+52	+73	+69	+43	+53
Net Migration	-72	-320	-322	+48	-209	-49	-287
Estimated Resident Population	16,601	16,384	16,114	16,235	16,095	16,089	15,855

Note: The April, 1990 resident population of Carbon County that was recorded by the U.S. Census was 16,659 persons. The July, 1990 calculation used the April, 1990 population estimate and subsequently added or subtracted increases and decreases that were associated with births, deaths, and migration between April and July, 1990.

Source: Wyoming Department of Administration and Information,
Division of Economic Analysis, 1997

In Chapter Four, the economic evaluation associated with the Land Use Plan indicated that existing employment in the mid-1990's remained stable and continues to show positive signs for future growth and expansion. The most significant growth potential lies in the coal industry around the turn of the century. Potential surface and underground deposits are expected to sustain the existing workforce at Arch of Wyoming, as well as provide some 60 additional jobs in the transportation sector.

Increased employment opportunities at the Wyoming State Penitentiary, as well as the influx of a proportion of WSP inmate families, will also contribute to continued in-migration to Carbon County during the 1997-2015 period. New opportunities at the planned maximum security facility are also expected to generally stabilize the overall workforce at WSP because workers will gain an expanded range of potential career promotion opportunities.

Results from the resident survey, which was conducted for the Land Use Plan (see Chapter Three: Community Issues and Priorities), indicate that family, friends and relatives, as well as employment and business opportunities, are the primary factors that motivate residents to remain in Carbon County. These results suggest relatively strong community ties to the County as long as employment and business opportunities remain stable or increase.

The quality of life is attractive to most residents in Carbon County. Wildlife and open space dominate the landscape of the County. At the same time, the 10 communities of Carbon County offer diversity and provide variable levels of community amenities and public services that can meet a wide range of personal expectations.

In the context of the preceding issues, it is believed that future out-migration will gradually decrease; greater in-migration is expected to gradually increase. By the year 2001, it is anticipated that net migration in Carbon County will begin to reflect higher levels of in-migration. The gradual reversal in net migration is primarily expected because of the potential employment that will accompany expanded coal development in the Hanna Basin, oil and gas development in the Great Divide basin, as well as the expansion of the Wyoming State Penitentiary. This economic activity will also likely fuel some growth in the service sector of the County economy. With anticipated improvements in local land and resource management, it is also believed that the people of Carbon County will continue to have generally favorable perceptions concerning the quality of life in the County.

Households and Families

Since 1990, the average household size in Carbon County has remained generally constant and comparable to national trends. The estimated average household size in Carbon County was 2.63 persons per household in 1990 and included 2.64 persons in 1995 (Wyoming Department of Administration and Information, Division of Economic Analysis, 1997). The size of future households in Carbon County will have considerable influence upon the growth of Carbon County's future population.

While the size of Carbon County households has remained generally stable since 1990, the composition of households in Carbon County is generally comparable to national trends in the United States. American households that contained families represented about 81 percent of all households in 1970. This proportion dropped to 74 percent in 1980 and slipped to 71 percent in 1990 and 1994 (Rawlings, 1997). In 1990, approximately 73 percent of all households in Carbon County represented family households (U.S. Bureau of the Census, 1990).

The U.S. Census Bureau classifies family households in one of three ways:

- Married-couples with families;
- Families with female householders with no husband present; and,
- Families with male householders with no wife present.

There are no signs that the average household size of future households will increase between 1997 and the year 2015. However, there are various social indicators that suggest the average household size may remain close to its present level or decrease further.

Changes in social values have gradually caused a continued disintegration of the American family, which traditionally contained married male-female couples. Roughly one-half of all marriages in the United States eventually result in divorce. These and other changes point to a growing preponderance of family households that will include a single male or female householder with fewer or no children. In 1994, for example, less than half of American households had one or more children that lived in the home (Rawlings, 1997).

Non-family households are also on the rise. Between 1970 and 1994, the proportion of non-family households grew from 19 to 30 percent of all households in the United States. Similar trends are apparently evident in Carbon County since non-family households accounted for 27 percent of all households in 1990 (U.S. Bureau of the Census, 1990). About 83 percent of the non-family households in America represent people who live alone (Rawlings, 1997). The growth of non-family households also provides another indicator that suggests that future households in Carbon County will likely have similar or fewer persons per household.

Growth of Senior Citizens

A significant growth in persons 65 years and older has occurred during the 21st century. In 1900, the American population included some three million persons in this age group. By 1994, these senior citizens represented 33 million persons. During the same period, the total population of the United States only tripled (Hobbs, 1997).

In 1990, persons 65 years and older comprised about 10 percent of the Carbon County population, as well as in the overall State population. A recent estimate by the U.S. Bureau of the Census, Population Estimates Branch, suggests that the proportion of this age group to the overall State population increased to only 11 percent in July, 1995. This proportion represents one of the lowest in the United States (Hobbs, 1997).

Unlike other states, e.g., Florida, Pennsylvania and Iowa, with a higher proportion of senior citizens, the 65 years and older age group is not expected to significantly influence future population growth in Wyoming or Carbon County. Wyoming is blessed with numerous natural resources that remain attractive to most residents and visitors. However, winter weather and moderate accessibility to medical services and other consumer outlets will probably not promote any significant increases in this age group.

Anticipated Population Growth to the Year 2015

Scope and Application of Future Population Growth Assumptions

Growth assumptions were developed by Pedersen Planning Consultants for the unincorporated areas and 10 municipal areas of Carbon County in order to forecast the future resident population of the County. These assumptions generally included two tiers of anticipated conditions:

- County wide assumptions concerning natural growth rate, migration, average household size, future employment, and regional residential growth; and,
- Estimates and related assumptions concerning the future size of the occupied housing stock in each municipality and the unincorporated area of Carbon County.

The County-wide and municipal assumptions were made for four periods of time:

1997-2000,
2001-2005,
2006-2010, and,
2011-2015.

Residential land use estimates for the base year of 1996 were calculated through the use of electrical meter data from the four electrical utilities that serve Carbon County residents, as well as water meter records from the 10 municipalities in Carbon County. A land use-population model was established for

Carbon County using Excel software. The model calculates the future population of the unincorporated area of the County and each of the 10 municipalities. The estimated number of housing units for 1996 and each future time period was applied to the assumed average household size to derive the estimated size of the future resident population.

An annual update of the model can conveniently be made through the input of new residential information. Building permit information from the Carbon County Department of Planning and Development and each municipality can easily be input into the model to update the forecasts that were developed for the Carbon County Land Use Plan.

Overall Population Growth of Carbon County

Future population growth in Carbon County is expected to gradually increase between 1997 and the year 2015. Future population growth will be fueled primarily by future employment and business opportunities in the Carbon County economy. Nominal growth is also anticipated from the in-migration of residents who will be seeking a slower-paced, rural lifestyle.

Potential quality of life issues that could discourage future population growth are not expected to occur during the 1997-2015 period. However, this conclusion is based upon an important assumption that Carbon County will continue to encourage economic growth that addresses lifestyle and environmental issues of Carbon County residents, and avoids significant, adverse impacts to existing residential communities.

In this context, an increase in the County population is not anticipated until the 2001-2005 period, when planned coal development activities in the Carbon Basin begin to emerge. In essence, a reversal in the current, net migration out of Carbon County is not expected to occur until there are new jobs, or economic expansion within Carbon County, that suggest some longer-term employment and household income opportunities. Such growth will encourage the in-migration of new residents and discourage out-migration of the existing labor force and their dependents.

1997-2000

In the short-term, continued out-migration is expected to occur from 1997 through the year 2000 despite anticipated growth in construction and government employment. A decline in the overall County population will be prompted primarily by the anticipated closure of the existing Cyprus-Shoshone coal mine by the end of 1999. At the time of this report, Cyprus Amax continues to complete ongoing mining and reclaim existing longwall panels at its existing mine northwest of Hanna by the end of 1999. In the interim, a planned cutback of about 15 employees will reduce the Cyprus Amax workforce to about 128 employees in 1998 and 1999 (Borla, 1997). About three employees would be required to perform monitoring requirements after the Cyprus-Shoshone mine is closed in late 1999. As a result, approximately 132 underground mining jobs in Carbon County will be lost by the year 2000.

Ground transportation requirements that are associated with the proposed Elk Mountain Mine project will generate roughly 60 new jobs in the transportation sector of the economy beginning around the year 2000. The expansion of the transportation sector employment will annually generate some \$3.0 million of direct expenditures and create new indirect employment in the service sector of the Carbon County economy.

New job opportunities in construction and operations associated with the SeaWest Energy project near Arlington will stimulate some job growth in construction, retail trade, and professional service sectors of the County economy. This economic activity will be important to the Carbon County population. Greater optimism and opportunity will begin to encourage some greater investment in local business expansions and discourage out-migration.

Signs of new investment in residential construction will also likely materialize during this period. Investors will envision new investment opportunities as the County prepares to embrace new incoming workers associated with the expansion of the Wyoming State Penitentiary, as well the dependents of new inmates at WSP. Additional housing starts are also expected in light of a continued influx of oil and gas workers, as well as their dependents, who are working in the Wamsutter area.

2001-2010

Planned coal development activities by Arch of Wyoming in the year 2001 are expected to sustain its existing surface mining labor force. Arch of Wyoming representatives indicate that surface mining operations at the proposed Elk Mountain Mine will occur between 2001 and 2012.

Ground transportation requirements that are associated with the proposed Elk Mountain Mine project will continue to generate roughly 60 new jobs in the transportation sector of the economy between 2000 and 2005. Existing transportation companies in the County will be able to draw on some qualified truck drivers and mechanics from Carbon County. However, it is believed that additional personnel will be required and requested by selected trucking contractors to relocate to the County.

Potential underground mining operations are expected to take place between 2003 and the year 2030 (Turner, 1997). If existing plans are realized, Arch of Wyoming will require approximately 240 underground coal miners for this project. Population forecasts for the 2001-2010 period assume the mining of underground coal reserves and the in-migration of 240 underground coal miners.

If Arch of Wyoming pursues underground mining in the Carbon Basin, a new railroad spur would be developed from Medicine Bow to the Carbon Basin between 2003 and 2005. Upon completion of the railroad spur in about 2005, the need for truck transportation to support surface mining operations would be negated near the end of 2005. In the absence of underground mining, truck transportation would be required to about 2012.

The Elk Mountain Mine project is expected to generate population growth primarily in Hanna and Medicine Bow. Secondly, it is envisioned that the remaining population growth will probably take place in Rawlins, Saratoga, Encampment, and Riverside.

During this period, a completed maximum security facility at the Wyoming State Penitentiary complex will also provide jobs for some 162 new employees at WSP. Such employment will generate new population growth in the County, particularly the City of Rawlins.

2011-2015

Surface mining activities by Arch of Wyoming in the Carbon Basin will continue through, at least, the year 2012. The potential extraction of additional coal deposits via underground mining may be pursued by Arch of Wyoming through the year 2030 if future market sources, market prices, and cost of production continue to bring an attractive return-on-investment.

In the absence of this production, Carbon County could likely face a significant downturn in the economy that would represent a potential loss of about \$12.0 million in direct expenditures and about 2.4 million in indirect expenditures (1997 dollars). This potential loss in economic activity would likely result in significant out-migration of surface coal miners, truck drivers, mechanics, and their dependents. It would also encourage the out-migration of various small business owners that will be involved in retail trade and professional services. The extent and impact of the out-migration would be similar to the downturn that occurred in the early 1980's unless other primary industries or economic activities are present in the County that would discourage out-migration and the discontinuation of small business investments.

Average Household Size

The future size of households in Carbon County is expected to remain stable at about 2.64 persons until the year 2000. However, a slow, gradual decline in household size is anticipated between 2001 and the year 2015. By the year 2015, the average household in Carbon County is expected to contain about 2.20 persons.

For the purposes of forecasting future population, the following statistical assumptions concerning average household size were used for the 1997-2015 planning period:

1997-2000	2.64 persons
2001-2005	2.49 persons
2006-2010	2.34 persons
2011-2015	2.20 persons

Availability of Land for Future Residential Expansion

There is a significant amount of rural agricultural property in Carbon County that is generally suitable for future residential expansion. However, the availability of such lands for future residential development will be dependent upon various considerations such as:

- the land uses of existing landowners,
- the economic viability of ranch operations,
- the age of ranchers and their dependents,
- long-term corporate and family plans associated with rural properties,
- the distance to existing community water and wastewater systems,
- accessibility of rural property to schools, public facilities, employment, and shopping areas,
- the potential availability of groundwater supplies and the costs associated with well development, and,
- the suitability of residential properties for onsite wastewater disposal systems.

Carbon County and the ten municipalities within the County will also influence the location, type, and density of future residential development. The Carbon County Planning Commission and municipal planning commissions will review future requests for change in zoning and proposed residential subdivisions. The Carbon County Land Use Plan will recommend general areas for future residential expansion and provide a guide to future land development in the County.

Some remote land subdivisions have already been established north of Saratoga and within selected areas of the Medicine Bow-Routt National Forest (MBRNF). In addition, a smaller subdivision, Cow Creek Station, is located approximately seven miles north of Encampment on the east side of Highway 230. These properties remain largely undeveloped; however, the development of some recreational homes continues to occur in these areas.

It is envisioned that future residential development will primarily occur adjacent to the 10 municipalities in Carbon County. These areas hold the greatest promise for future residential development in light of their proximity to community water and wastewater systems, commercial services, schools and public facilities, and other community services. Local municipalities will more realistically be able to consider the potential annexation of future residential subdivisions in their respective communities.

New residential subdivisions in more remote, unincorporated areas of the County will be more attractive to some incoming buyers. Potential buyers in these areas will likely purchase and desire to build residences on somewhat larger parcels, e.g., 40-160 acres in size. At the same time, residents from these areas will seek County services such as year-round road maintenance, police and fire protection, and emergency medical services.

Anticipated Residential Growth in Carbon County's Unincorporated Areas

Separation Flats Area

Rural, residential development has already begun to establish about 15 miles north of Rawlins in the vicinity of Separation Flats. The Coyote Springs development has a large number of 40 to 160 acre parcels that are being marketed throughout the continental United States by a California-based company. The division of these former rangelands into smaller parcels will gradually foster new residential growth in this area between 1997 and the year 2015 unless potential residential development is discouraged by the Carbon County Land Use Plan and future County zoning.

West of Rawlins

Continued residential growth west of Rawlins is occurring in the vicinity of Cherokee Road. Smaller splits of larger parcels have already established a sizeable number of parcels in this area that range between 2.5 and 80 acres in size. During the 1997-2015 period, this area is expected to gradually increase as more persons build new homes and settle in the area.

The connection of this area for city water and wastewater services would expedite residential expansion in this area. However, the City of Rawlins is understandably not excited with the expansion of its water systems into this area since a higher pressure zone for the water system would require higher pumping cost. Despite this constraint, the population will gradually increase. New homeowners will develop individual groundwater wells and onsite septic tank systems.

North and East of Rawlins

Future residential expansion of Rawlins is likely to occur north and east of Rawlins incorporated boundaries. However, such expansion is not expected until later in the planning period., e.g., 2011-2015.

Demands in this area may be prompted by future market demands for single family residences on suburban properties that may range between one and five acres. Such buyers will probably be a consequence of gradual economic growth from anticipated coal development after the year 2000.

Lands Outside of Saratoga

The primary focus of future development in the unincorporated areas of Carbon County area is anticipated outside of the incorporated area of the Town of Saratoga. Some increased residential development is already taking place in Mountain View Estates and Cow Creek Station. Other private properties between the four units of this subdivision represent future opportunities for expanded residential development in this area. The proximity to Saratoga, Saratoga Lake, and other recreational opportunities in the Platte Valley will encourage further residential development in this area by individual buyers and residential developers.

Potential residential development opportunities also lie west of Saratoga. It is envisioned that smaller portions of private agricultural properties along Jack Creek Road and North Spring Creek Road will eventually be developed between 2006 and 2010. The accessibility of this area to Saratoga Town and the Medicine Bow-Routt National Forest will make this area an attractive real estate investment and potential market area.

East and South of Riverside

A growing residential area is being established east of Riverside along Blackhall Road. Individual landowners have, in recent years, subdivided parcels and built residences in the area.

The Carbon County Board of Commissioners recently approved zoning for a 2,100-acre residential area on the southeast side of Baggott Rocks. This area will contain residential densities not greater than one dwelling unit per 40 acres.

These areas are situated immediately downslope of the Medicine Bow National Forest and contains scenic views of Bennett Peak, Medicine Bow Peak, the Sierra Madres and the Continental Divide, Kenneday Peak, and Elk Mountain. These views and nearby recreational opportunities will continue to attract the development of residences on smaller, suburban properties. In addition, the south end of the Platte Valley is conveniently accessible to Laramie, Cheyenne, and Fort Collins.

Rural Properties East and South of Savery

The unincorporated areas east and south of Savery will continue to become increasingly attractive to a second-home market from the Front Range of Colorado and other urban communities in the central Rocky Mountain area. These properties will primarily emerge on the market from occasional land sales by larger ranchers in the area. Such properties will likely be larger than 35 acres to avoid the applicability of County subdivision regulations. In the event that land use law in the State of Wyoming changes, the size of these parcels that will sell will likely be smaller.

The future attraction to this area will be the scenic, rural environment of this area, and its proximity to Aspen Alley and the Medicine Bow National Forest.

Rural Properties in Northeast Carbon County

Rangelands outside of Hanna, Medicine Bow, Arlington, Elk Mountain, and McFadden will likely become increasingly attractive to some of the future workers associated with the SeaWest Energy project near Arlington, coal miners, and the second-home market. Similar to the Little Snake River area, marginal rangelands larger than 35 acres will gradually be divided to meet rural residential demands.

Anticipated Residential Growth in Carbon County's Municipal Areas

Baggs

A modest increase in population is anticipated during the 1997-2015 period. Such growth is expected to begin during the 2001-2005 period, and continue gradually to, at least, the year 2015. Such development will occur within the incorporated boundaries where roughly 61 housing units were vacant in 1990. It is expected that future residential development will primarily represent the sale, renovation, or replacement of existing homes that are presently vacant.

Recent mining interests have recently pursued the development of some lands in the vicinity of Baggs to mill, quarry, and stockpile some ore material that is mined in the State of Colorado. It is assumed that the two companies will generate the influx of several new residents who will occupy, at least, two more housing units in Baggs during the 1997-2000 period.

The primary source of such future growth is expected from a limited expansion of light industrial activities that may support future oil and gas industry activities in the Washakie Basin. Through the encouragement of the Town of Baggs and the Carbon County Economic Development Corporation, potential new light industrial facilities are expected to generate the in migration of about 14 additional new residents during the 1997-2015 period.

A third potential draw to this community may be the eventual expansion of smaller visitor accommodations, guide and outfitter services, retail outlets, and restaurants. Such development could generate the in-migration of roughly 20 persons during the 1997-2015 period.

Dixon

It is anticipated that the future population of Dixon will experience modest growth during the 1997-2015 period. The in-migration of roughly 42 new residents is expected between 1997 and the year 2015.

Future population growth will probably not be tied to any prospective economic activities within or near this community. Rather, it will be primarily dependent upon the capacity of adequate water and wastewater systems to serve an expanded population.

The availability of some undeveloped housesites will enable such growth to occur. Additional opportunities will occur with the resale of existing homes to new incoming buyers.

A gradual increase is expected to occur as this community is visited by persons traveling through Carbon County. Some of this potential growth will likely include the settlement of a greater number of retirees. A few small investors may be motivated by long-term speculation and the use of a second-home during the summer months.

Elk Mountain

Elk Mountain is gradually attracting an increasing number of second-home buyers and retirees. Future growth in this community may also include the relocation of operations and construction personnel who will support the development, operation, and maintenance of the SeaWest Energy project near Arlington, as well as the Elk Mountain Mine project southeast of Hanna. Gradual growth of Elk Mountain during the 1997-2015 period is expected to generate the influx of 47 residents.

One major attraction to this community is the convenient accessibility to Interstate 80 and the close proximity of Laramie, Cheyenne, and the Front Range communities of Colorado. While close to Interstate 80, Elk Mountain is located a few miles south of the Interstate. Consequently, the community feels more like a friendly, small town that is nestled along the scenic Medicine Bow River. Elk Mountain is also in close proximity to the northern portions of the Medicine Bow-Routt National Forest that provide a variety of recreational opportunities.

Encampment

While some residential growth occurred between 1990 and 1996, it is likely that future growth will be extremely limited until the moratorium on new water taps is suspended, the capacity of the water system is expanded, and the Town is metered for water consumption. The potential consolidation of smaller residential lots by the Town of Encampment would also facilitate the development of undeveloped lots in the Town.

A population increase will probably not occur until the year 2001 in light of the time required to develop planned water system improvements. Anticipated growth is expected to increase the resident population by about 60 persons between the year 2001 and 2015.

The draw for new-in migration will be quality of life. The Medicine Bow-Routt National Forest is situated immediately upslope of this community and affords residents with various summer, fall and winter recreational opportunities. New incoming residents will perceive that Encampment offers a refreshing departure for incoming persons and families that are seeking a smaller and more friendly environment. At the same time, the community is conveniently accessible to Laramie and other Front Range communities.

Future economic growth will be primarily generated by some growth in the tourism industry; the local service sector will also expand to support gradual increases in resident population and tourism in the Platte Valley. In addition, the potential establishment of one or two small, light industrial enterprises is expected during the 1997-2015 period. The convenient access to recreational opportunities is also expected to generate some limited residential demand for

workers who will be employed at the Wyoming State Penitentiary in Rawlins and the Elk Mountain Mine project near Hanna.

Hanna

The population of Hanna is expected to decline by the end of the year 2000. The anticipated closure of the Cyprus-Shoshone mine will result in the loss of about 140 jobs. About 84 of these workers will be from Hanna. The impact will be the out-migration of up to 230 residents. However, this decline is expected to be temporary and will likely be offset by new employment opportunities.

Substantive population growth will occur between 2001 and 2005 as planned surface and underground coal mining projects in the Hanna Basin are realized. Subsequently, the level of growth will likely begin to level off and decline somewhat with the elimination of truck transportation jobs at the proposed Elk Mountain Mine. Despite the closure of the Cyprus-Shoshone Mine near the year 2000, Hanna's population is expected to increase to about 1,414 residents during the 2001-2005 period, and gradually decline to about 1,220 residents during the 2011-2015 period.

Developed and undeveloped residential lots are already available in Hanna. Some developed residential lots will eventually become available for re-sale and renovation. Additional commercial development may also occur after the year 2000 to support the growing increase in population.

A modern recreational center provides numerous indoor recreational opportunities for local residents. Hanna is also close to hunting areas in the Shirley Mountain area, as well as other popular hunting areas.

The proximity to the future coal mining areas will provide the primary impetus to incoming residents and their dependents. In addition, some population influx will also be attributed to a smaller portion of the labor force at the expanded Wyoming State Penitentiary in Rawlins.

Medicine Bow

Several underground coal miners and their dependents are expected to depart from this community during the 1997-2000 period. This out-migration will be offset by a portion of the truck drivers and mechanics that will support the proposed Elk Mountain Mine project. The in-migration of transportation-related workers and their dependents is anticipated in the year 2000.

An additional source of new residents is expected to be derived from a portion of the underground coal miners associated with the proposed Elk Mountain Mine project. Some 141 new residents are expected to come to Medicine Bow around the year 2005 via the anticipated migration of about 55 miners and their dependents. The development of proposed railroad facilities associated with underground mining at the proposed Elk Mountain Mine are expected to generate a loss of about 10 transportation workers and their dependents during the 2006-2010 period.

Other nominal growth in Medicine Bow may be generated from the potential expansion of Western Wood Products, or some other light industrial enterprise. Such development might generate the in-migration of another 15 residents during the 2001-2005 period. Subsequently, the population will generally remain stable.

A small expansion in retail trade will likely accompany the anticipated residential growth. Such development may induce the in-migration of several more residents during the 2006-2010 period. At the same time, this growth will also be countered with the out-migration of some 10 persons associated with transportation employment after the end of the year 2005.

Future residential development will likely involve the redevelopment or renovation of existing residential lots. Smaller households with no children are anticipated to be the primary market for future residents.

Rawlins

During the 1997-2015 period, two regional resource development projects, the Wyoming State Penitentiary expansion, and four possible light industrial investments in this community are expected to generate an increase from current population levels. The cumulative effect of these projects is expected to generate an estimated 2,517 new residents by the year 2015.

The development of a planned expansion of the Wyoming State Penitentiary will generate new housing demands for new WSP employees and a portion of the new inmate families. All inmate families are expected to reside in Rawlins and the majority of WSP employees will also probably choose Rawlins for their place of residence. Some 55 new households are expected to occupy existing and/or new housing units by the year 2000; another 121 housing units will become occupied between 2001 and 2005.

Rawlins will also experience an influx of some 100 to 120 construction workers who will develop the new maximum security facility (Pieper, 1997). It is expected that these workers and their dependents will generate a demand for about 20 additional housing units. The remainder of the workforce will bring recreational vehicles and/or trailers to the community. After completion of the Penitentiary expansion, it is believed that 10 percent of this workforce will remain in the Carbon County economy to seek other construction opportunities.

Continued oil and gas exploration in the Washakie and Great Divide Basins is expected to induce a portion of oil and gas workers, and their dependents, to the City of Rawlins where more community services are available. During the 1998-2015 period, an additional 340 workers associated with the construction of access roads, testing operations, the drilling and completion of wells, and pipeline construction are expected to relocate to Rawlins. Between 2001 and the year 2015, operations and maintenance workforce associated with oil and gas development activities will attract an additional 555 personnel. In a cumulative sense, oil and gas activities in the Washakie and Great Divide Basins are expected to bring an anticipated 2,100 workers and dependents during the 1998-2015 period (Guernsey, 1997).

The staffing of the new prison will generally coincide with anticipated coal mining, as well as oil and gas, industry expansion in the Hanna Basin. For this reason, substantive growth is anticipated between 2001 and 2005. Subsequently, the rate of increase will continue, but slow somewhat to the year 2010. The resident population is expected to experience modest growth between 2011 and 2015.

Coal industry representatives from Arch of Wyoming indicate that the planned Elk Mountain Mine project (southeast of Hanna) will generate about 60 new jobs in the transportation sector of the economy. It is assumed that about seven new households will migrate into Rawlins as a result of new employment. The remaining housing demand from this project will likely occur in Hanna, Elk Mountain, Medicine Bow, Saratoga, Encampment, and Riverside.

Continued economic development efforts of the City of Rawlins, the Carbon County Economic Development Corporation, and other organizations could also prompt the development of two, smaller light industrial operations between 2006 and 2010. Another two enterprises are envisioned between 2011 and 2015. It is expected that each of four enterprises will employ between 10 and 50 personnel. For planning purposes, it is assumed that some 46 new personnel will relocate to Rawlins during the 2006-2015 period. The remaining labor force will be generated from the existing resident population. During the 2011-2015 period, Rawlins is expected to have a resident population of 11,446 residents.

Riverside

The community of Riverside has residential development potential. However, the future growth of this community will depend primarily upon the availability and capacity of the water and wastewater systems that are operated by the Sierra Madre Joint Powers Board. An additional attraction that could stimulate some greater in-migration to Riverside would be a consolidation of the Riverside and Encampment communities.

The attraction to this area is expected to be those persons who are seeking the establishment of new tourism and retail trade opportunities in the Riverside-Encampment area. Such persons will likely be young couples or families, as well as some retirees.

Similar to Encampment, Riverside is also in close proximity to outdoor recreational opportunities in the Medicine Bow National Forest. In addition, State Highway 230 provides convenient accessibility to Laramie and other communities along the Front Range of Colorado. These community characteristics will also generate some limited residential demand for workers at the Wyoming State Penitentiary in Rawlins and the Elk Mountain Mine project near Hanna.

Some 22 new households are expected to relocate into Riverside between 1997 and the year 2015.

Saratoga

The future relocation of residents to Saratoga is expected to occur for a variety of reasons. The primary incentive will be for suburban and urban residents from other U.S. communities that are seeking a less hectic environment that is close to various recreational opportunities.

A growing community investment in tourism will generate some increased investment in visitor accommodations and local retail trade. Saratoga is also expected to draw some portion of new employment opportunities that will be generated from the Wyoming Penitentiary expansion and the proposed Elk Mountain Mine near Hanna. At the same time, the Town will continue to be attractive to persons who are seeking a slower-paced, rural lifestyle, or desire to establish new small business enterprises in the service sector.

In this context, it is believed that a future increase in population will begin in Saratoga by the year 2001. A modest increase in population is expected to occur between 2001 and 2010. Subsequently, a slight decline in population is anticipated between the year 2011 and 2015. It is estimated that there will be approximately 1,942 residents in Saratoga by the year 2015.

Sinclair

Sinclair will remain generally stable during the 1997-2015 period and experience some expansion in resident population. The stability and future growth of this community are based upon the assumption that the Sinclair Refinery will continue to remain economically viable.

A potential growth of the community is expected between 2001 and 2005. Some limited growth may materialize during this period because of an increased level of new construction opportunities, increased retail trade, and professional services in Rawlins. Some 15 new households may be formed in light of new employment opportunities at the Wyoming State Penitentiary in Rawlins. An additional nine households will be generated from a portion of the incoming underground miners associated with the Elk Mountain Mine project.

By the year 2015, a resident population of approximately 612 residents is anticipated.

Forecasts of Total Population and Regional Distribution

General

Based upon the preceding assumptions, a forecast of the future Carbon County population is presented for the 1997-2015 period (Table 5-7). The forecasts are presented for four time periods that include:

- 1997-2000,
- 2001-2005,
- 2006-2010, and,
- 2011-2015.

The forecasts indicate that Carbon County resident population will increase to about 19,206 persons by the year 2015. Such growth will represent an increase of about 21 percent from 1996 through the year 2015.

A modest decline in resident population is expected to continue between 1997 through the year 2000. Despite this decline, economic prospects and employment opportunities will begin to improve. The rate of out-migration from the County is also expected to decline.

Substantive economic expansion is envisioned between 2001 and 2005. Significant new employment opportunities will take place in the mining, transportation, oil and gas, and government sectors of the economy. The impetus of this expansion is expected from the proposed Elk Mountain Mine project near Hanna, as well as increased oil gas development in the Great Divide and Washakie Basins.

Continued growth in population is expected throughout the 1997-2015 period. A greater acceleration in the rate of population growth will likely occur during the 2001-2005 period. The rate of growth is expected to diminish between 2006 and 2015 as the rate of in-migration slows.

TABLE 5-7 ANTICIPATED RESIDENT POPULATION OF CARBON COUNTY 1997-2015 (NUMBER OF PERSONS)				
Forecast Period	Natural Growth (+)	In-Migration (+)	Out- Migration (-)	Total Anticipated Population
<i>Estimated 1996 Population</i>				<i>15,855</i>
1997-2000	63	230	400	15,748
2001-2005	55	2,013	50	17,766
2006-2010	47	811	50	18,574
2011-2015	40	642	50	19,206

Source: Pedersen Planning Consultants, 1997

Regional Population Distribution

The greatest growth will likely be experienced in Hanna, Medicine Bow, and Rawlins (Table 5-8). The growth of these communities will closely parallel future economic conditions, especially future coal development activities.

The growth of Saratoga, Elk Mountain, Encampment, and Riverside will likely be a reflection of real estate sales and development activity in Carbon County. However, Saratoga will benefit from both increased real estate sales and investment, as well as increased retail trade and professional services.

Limited population growth will occur in the Little Snake River area during the 1997-2015 period. However, the community of Baggs will experience some modest growth in both light industry and tourism. A continued influx of retirees to Dixon is also expected.

TABLE 5-8 ANTICIPATED DISTRIBUTION CARBON COUNTY RESIDENT POPULATION 1997-2015					
<i>Municipality/Area</i>	1996	1997- 2000	2001- 2005	2006- 2010	2011- 2015
Baggs	246	259	273	295	303
Dixon	121	130	136	145	163
Elk Mountain	173	186	225	227	225
Encampment	460	487	507	522	545
Hanna	1,094	983	1,467	1,399	1,273
Medicine Bow	319	347	493	477	455
Rawlins	9,021	9,532	10,572	11,272	11,911
Riverside	70	86	95	101	121
Saratoga	1,905	1,973	2,044	2,053	2,044
Sinclair	564	576	637	637	637
Total Municipal Population	13,973	14,559	16,445	17,124	17,673
Unincorporated Area Population	1,882	1,189	1,321	1,450	1,533
TOTAL COUNTY POPULATION	15,855	15,748	17,766	18,574	19,206

Source: Pedersen Planning Consultants, 1997